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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,074	02/11/2004	Afshin Momtaz	51463/SDB/B600	2103

23363 7590 08/24/2005

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EXAMINER

COX, CASSANDRA F

ART UNIT	PAPER NUMBER
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2816

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/776,074

Applicant(s)

MOMTAZ, AFSHIN

Examiner

Cassandra Cox

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,8,10-12,15,16 and 19-21 is/are rejected.
- 7) ☒ Claim(s) 3,6,7,9,13,14,17,18,22 and 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 May 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/13/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's arguments with respect to claims 1-2, 4-5, 8, 10-12, 15-16, and 19-21 have been considered but are moot in view of the new ground(s) of rejection.

Drawings

2. The drawings filed on May 27, 2005 have been accepted.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2, 4-5, 8, 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Popescu (U.S. Patent No. 5,432,480).

In reference to claim 1 Popescu discloses in Figure 1 phase detector comprising: a first flip flop (112) comprising: a data input coupled to a first signal (DIN) having a first frequency, and a clock input coupled to a second signal (CLK) having a second frequency, and a second flip flop (113) comprising: a data input coupled to the output of the first flip flop (112), and a clock input coupled to the second signal (CLK). Popescu does not disclose that the first frequency is a multiple of the second frequency.

However, the frequency of the clock is considered to be a design expedient dependent on the particular environment. Therefore, it would have been obvious to one skilled in the art at the time of the invention that any speed clock could be used including a clock of slower speed than the data clock for the advantage of clocking the data signal at a

Art Unit: 2816

slower rate to lessen the probability of false locking. The same applies to claims 5, 8, and 10-11, wherein the high speed latch and the low speed latch are seen to be equivalent to master and slave latches, respectively, and flip-flops containing master and slave latches are well known in the art, of which fact official notice is taken.

In reference to claim 2, Popescu discloses in Figure 1 wherein the first flip flop (112) is a high speed flip flop.

In reference to claim 4, Popescu discloses in Figure 1 wherein the second flip flop (113) is a low speed flip flop.

5. Claims 12, 15-16, and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (U.S. Patent No. 6,388,485) in view of Popescu (U.S. Patent No. 5,432,480).

In reference to claim 15, Kim discloses in Figure 3 a delay lock loop comprising: phase detector; digital filter (342), coupled to receive the at least one phase error signal (DS through controller 324), that generates at least one filtered signal (DCON2); and a phase rotator (344), coupled to receive the at least one filtered signal (DCON2) and the second signal (ECLK), that delays the second signal according to the at least one filtered signal (DCON2). Kim does not disclose that the phase detector comprises a first and second flip-flop. Popescu discloses a phase detector as mentioned above with respect to claim 1. It would have been obvious to one skilled in the art at the time of the invention that the modified phase detector of Popescu could be used in the circuit of Kim as the phase detector for the advantage of being able to decrease design time by using a well known design for a phase detector. The same applies to claim 19, wherein

Art Unit: 2816

Kim discloses in column 5, lines 49-50 (with reference to Figure 5) that the delay controller is implemented as a charge pump and the loop filter is seen to be element 542. The same also applies to claim 12, wherein all the limitations of the base claim and any intervening claims are met by Popescu as mentioned above with reference to claim 10.

In reference to claim 20 the delay circuit (544) comprises at least one delay line.

In reference to claim 15, Popescu discloses in Figure 1 the first flip flop, wherein the high speed latch and the low speed latch are seen to be equivalent to master and slave latches, respectively, and flip-flops containing master and slave latches are well known in the art, of which fact official notice is taken. The same applies to claim 21.

Response to Arguments

6. Applicant's arguments with respect to claims 1-2, 4-5, 8, 10-12, 15-16, and 19-21 have been considered but are moot in view of the new ground(s) of rejection. In response to applicant's argument that Popescu is disclosing a higher speed signal clock driving a clock input and a lower speed signal data driving the data input, the examiner has amended the rejection to state that one skilled in the art could use any speed clock to clock the flip flop, including a clock that is at a lower speed than the data signal. Furthermore, in using the flip flop of Popescu for phase comparison it does not matter which signal is used as the data signal and which is used as the clock signal. One signal is merely clocked with respect to the other at a particular speed. The purpose of the circuit is to obtain the phase difference between the two signals. You could easily

Art Unit: 2816

switch the signal inputs and make the signal that is presently the data signal the clock signal and vice versa.

Allowable Subject Matter

7. Claims 3, 6-7, 9, 13-14, 17-18, and 22-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

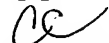
8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cassandra Cox whose telephone number is 571-272-1741. The examiner can normally be reached on Monday-Thursday from 7:00 AM to 4:30 PM and on alternate Fridays from 7:00 AM to 3:30 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CC



August 22, 2005



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